Supplementary Material (ESI) for Journal of Materials Chemistry

Supporting Information for

Stabilization of the nematic mesophase by a homogeneously dissolved conjugated polymer

Andreas Lohr and Timothy M. Swager*

Massachusetts Institute of Technology, Department of Chemistry

77 Massachusetts Avenue, Cambridge, MA 02139, USA.

E-mail: tswager@mit.edu

Optical micrographs.

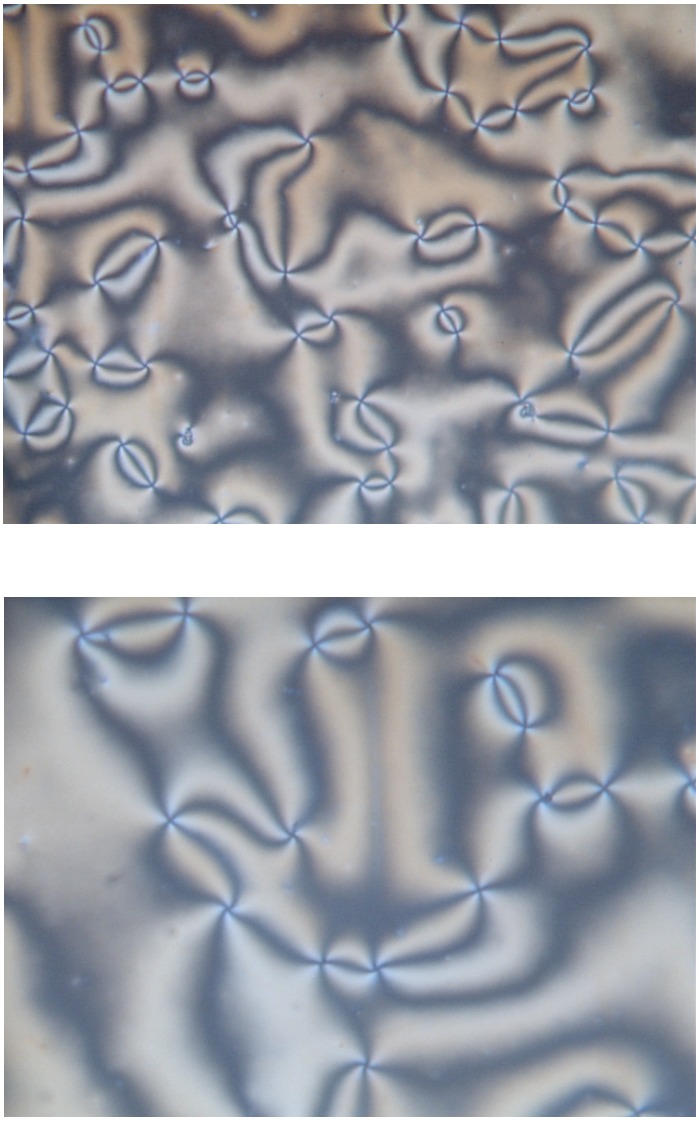

Figure S1. Optical micrographs with different magnification of a solution of **P1** in MLC-6884 (10 wt% **P1**) taken under crossed polarizers after slow cooling of the sample from the isotropic phase to 25 °C.

UV/vis absorption spectra.

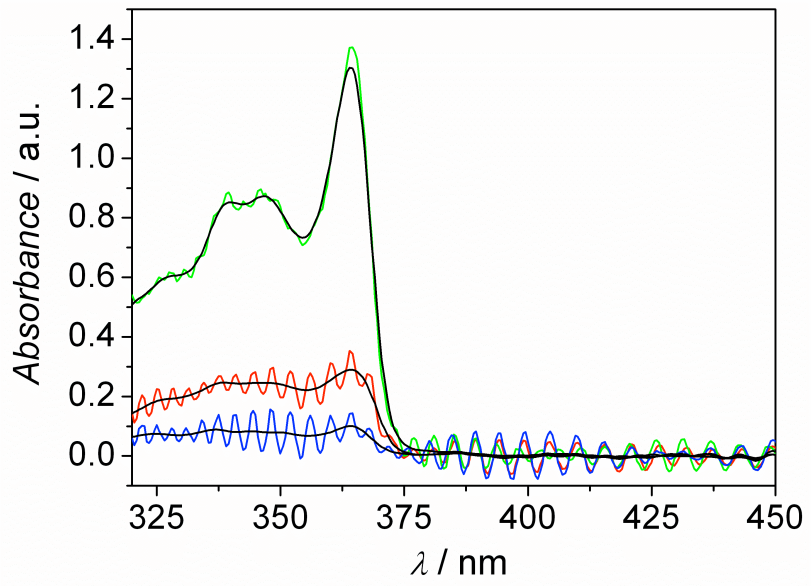

Figure S2. Absorption spectra of polymer **P1** dissolved in MLC-6884 (1 wt% polymer) and sandwiched between the glass slides of a test cell equipped with parallel rubbed polyimide layers for planar director alignment. The shown spectra were obtained before (red: nonpolarized light, green: light polarization parallel to the LC director, blue: light polarization perpendicular to the LC director) and after FFT filtering of the respective spectra with Origin 7 (black lines).

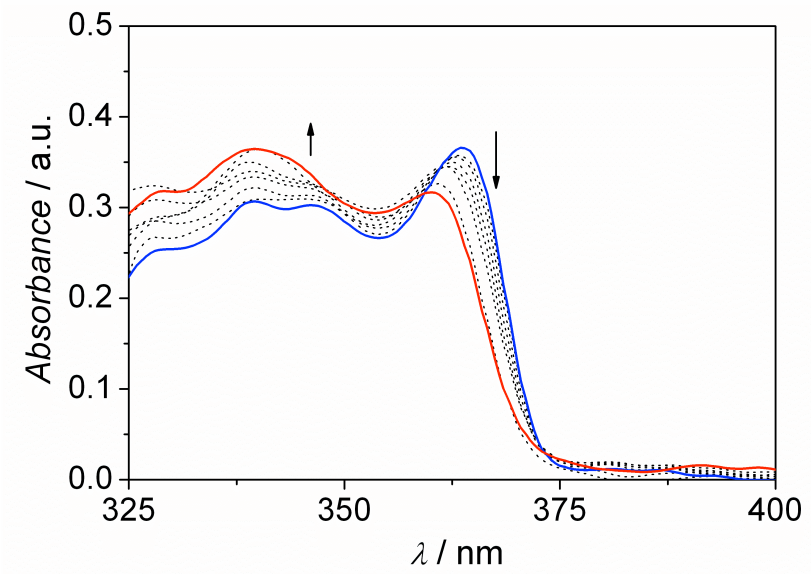

Figure S3. Nonpolarized temperature-dependent UV-vis absorption spectra of polymer **P1** dissolved in MLC-6884 (1 wt% polymer) and sandwiched between the glass slides of a test cell equipped with parallel rubbed polyimide layers for planar director alignment. The arrows indicate spectral changes with increasing temperature from 25 to 95 °C.

DSC thermogram.

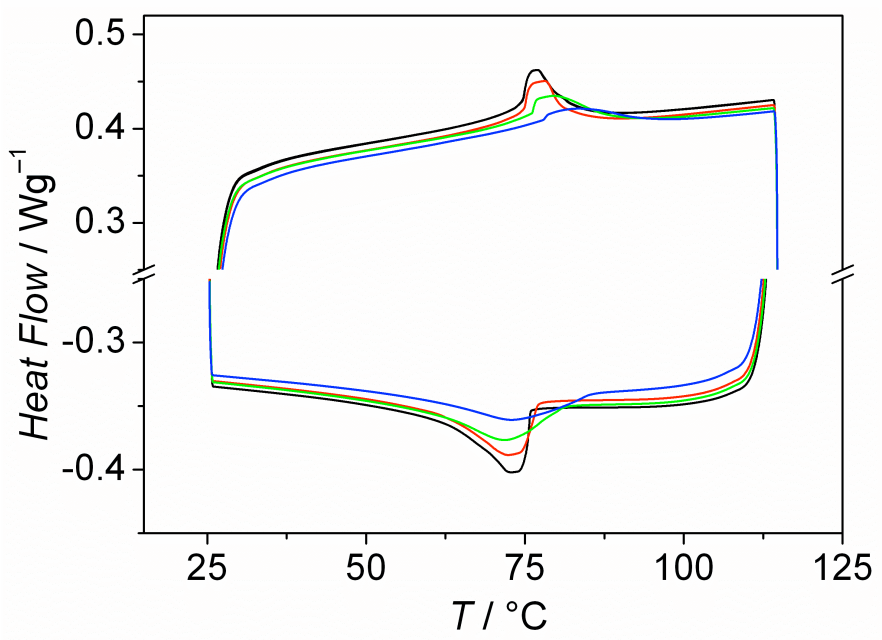

Figure S4. DSC thermograms of solutions of **P1** in MLC-6884 containing 0 (black), 1 (red), 5 (green), and 10 wt% (blue) **P1**. The heating/cooling rate was 10 K min−1.

^{1}H and ^{13}C NMR spectra.

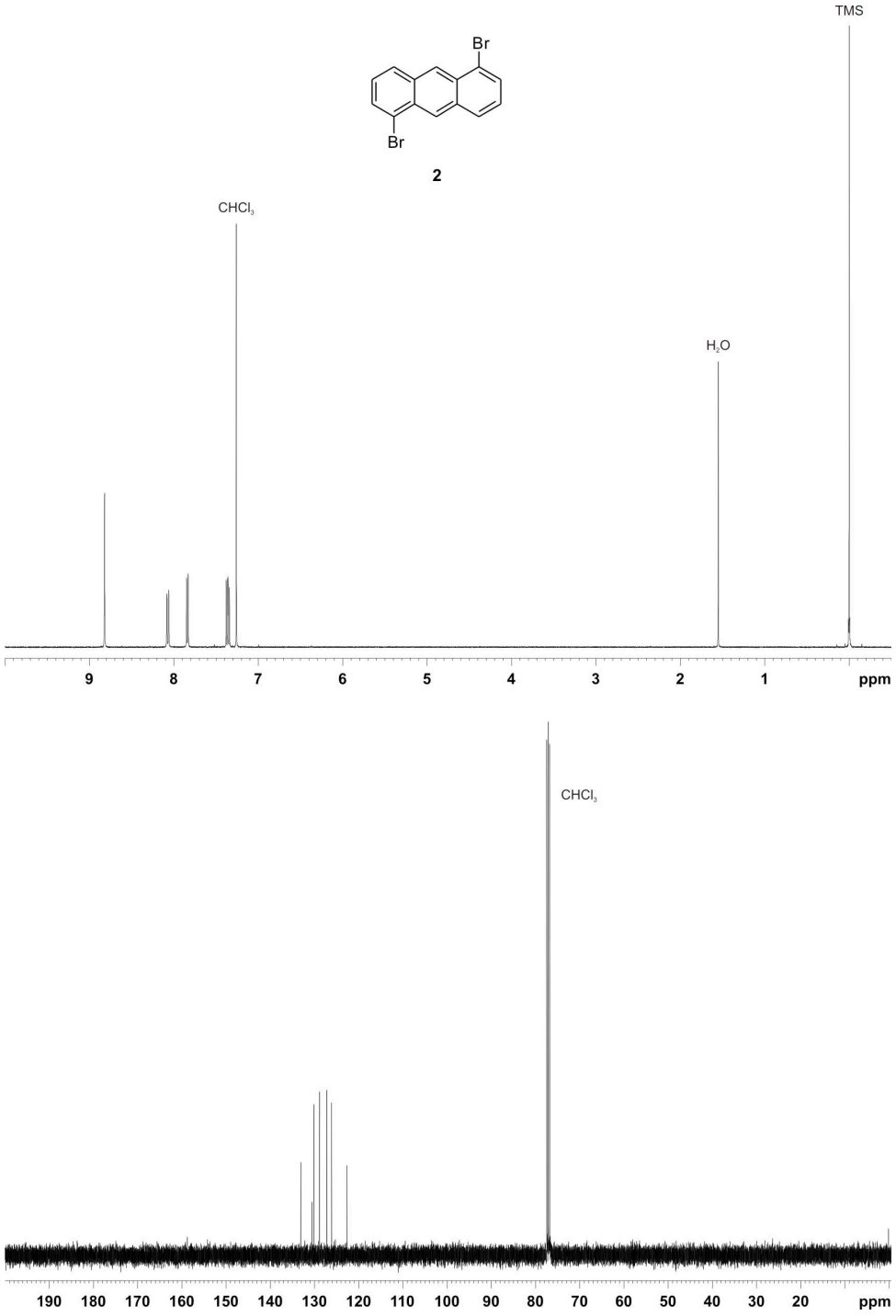

Figure S5. ^{1}H (top) and ^{13}C (bottom) NMR spectra of **2** in $CDCl_3$.

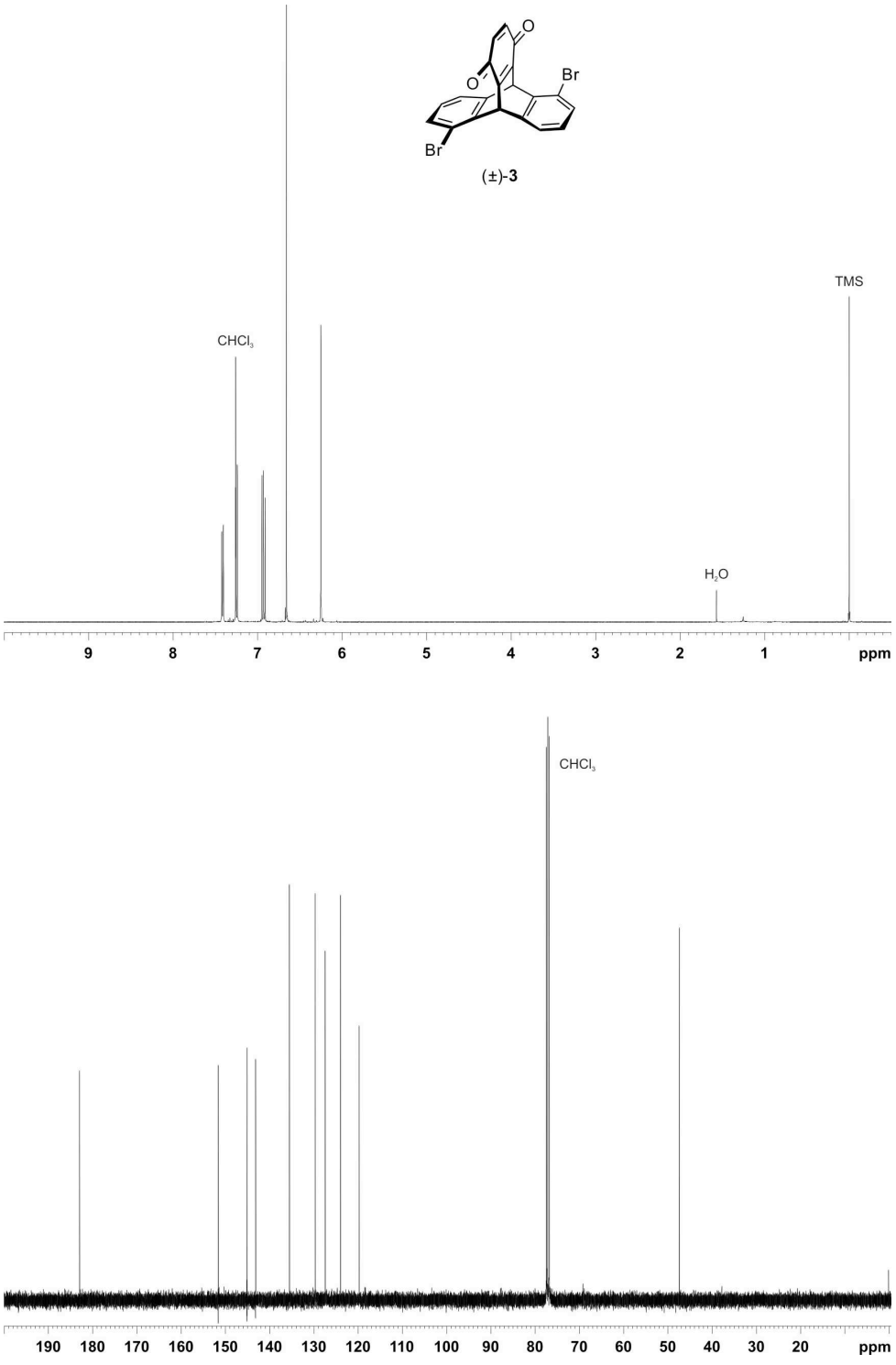

Figure S6. ^{1}H (top) and ^{13}C (bottom) NMR spectra of racemic triptycene quinone (±)-**3** in $CDCl_3$.

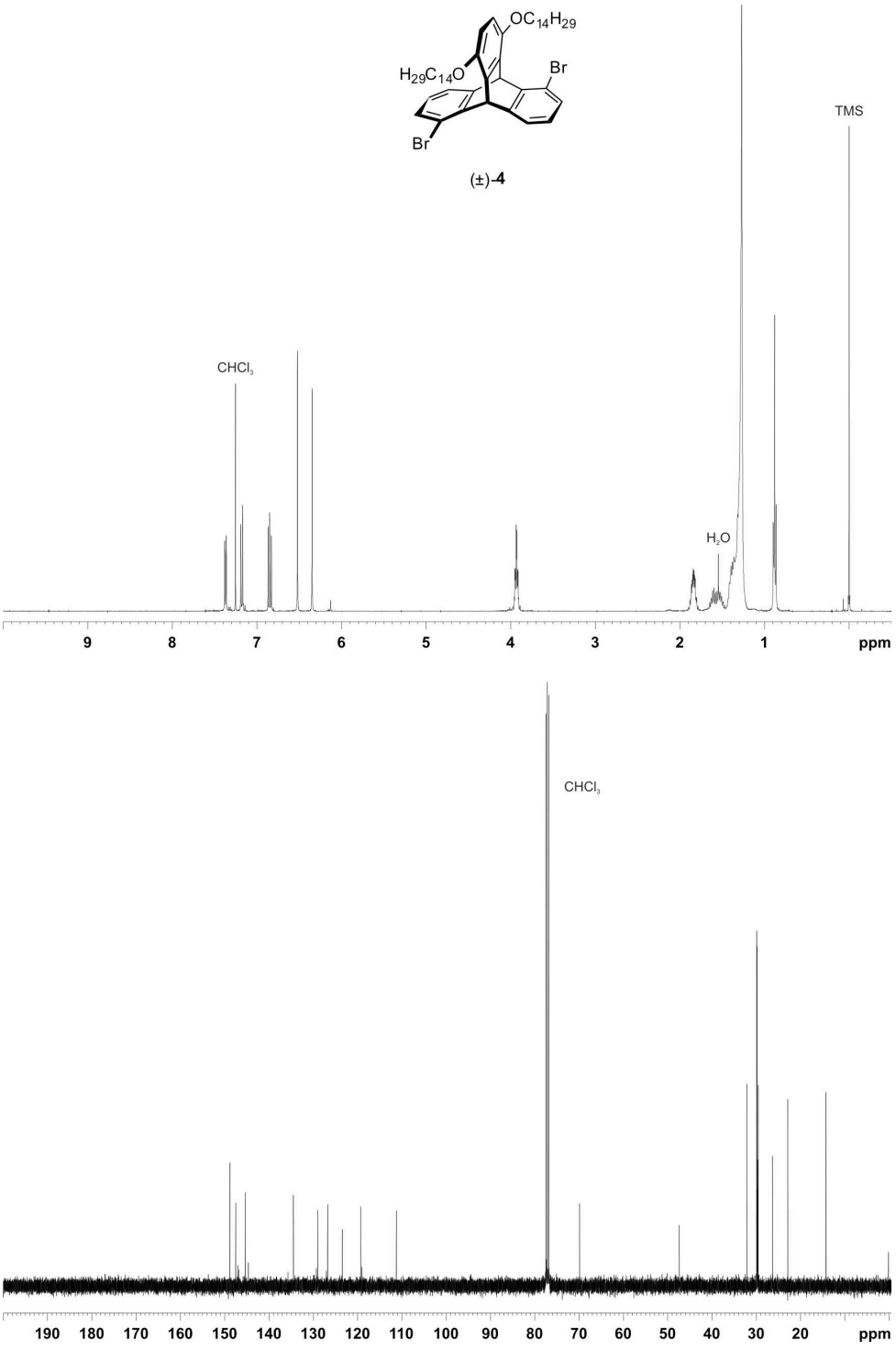

Figure S7. ^{1}H (top) and ^{13}C (bottom) NMR spectra of racemic dibromotriptycene (±)-**4** in $CDCl_3$.

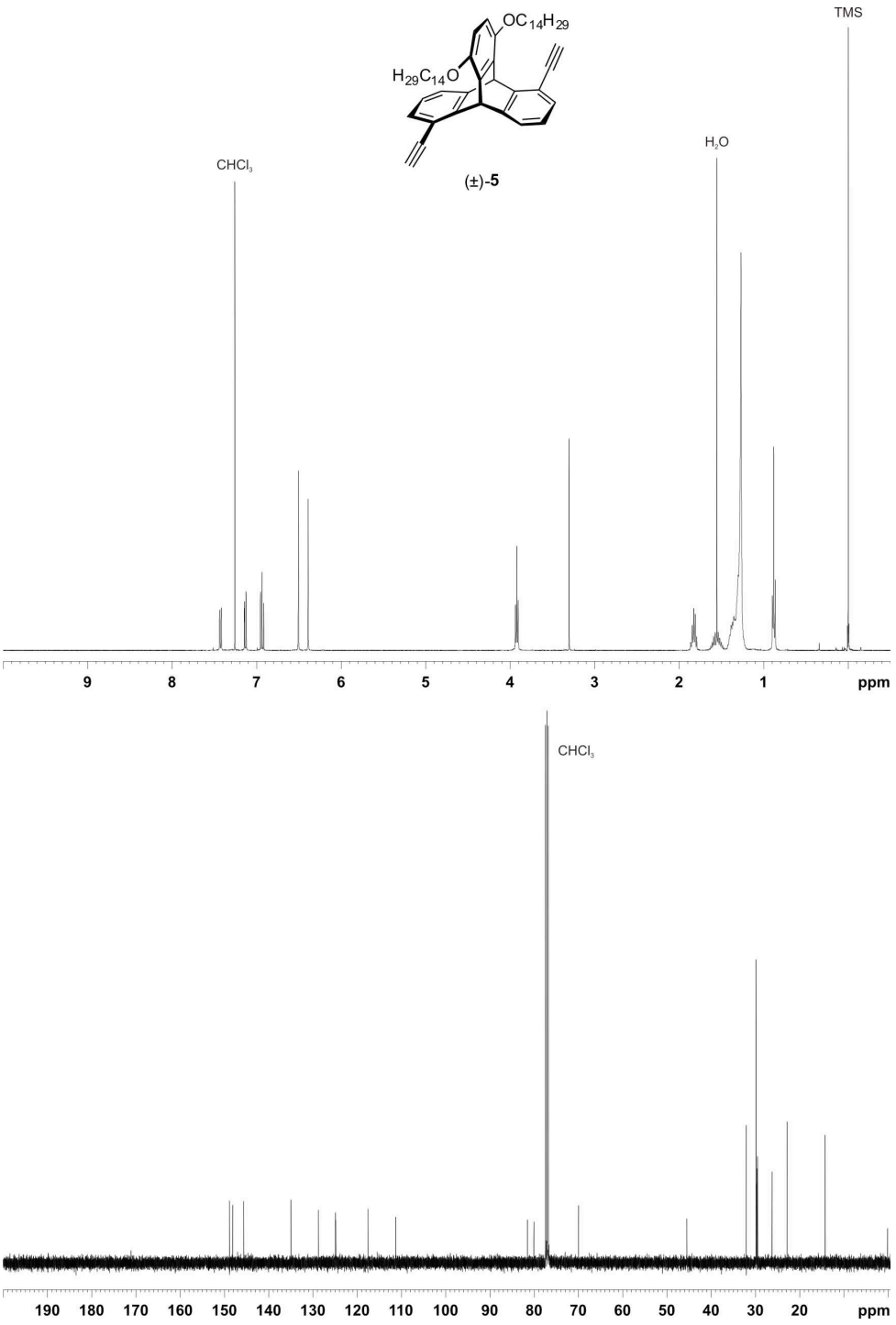

Figure S8. ^{1}H (top) and ^{13}C (bottom) NMR spectra of racemic triptycene monomer (±)-**5** in $CDCl_3$.

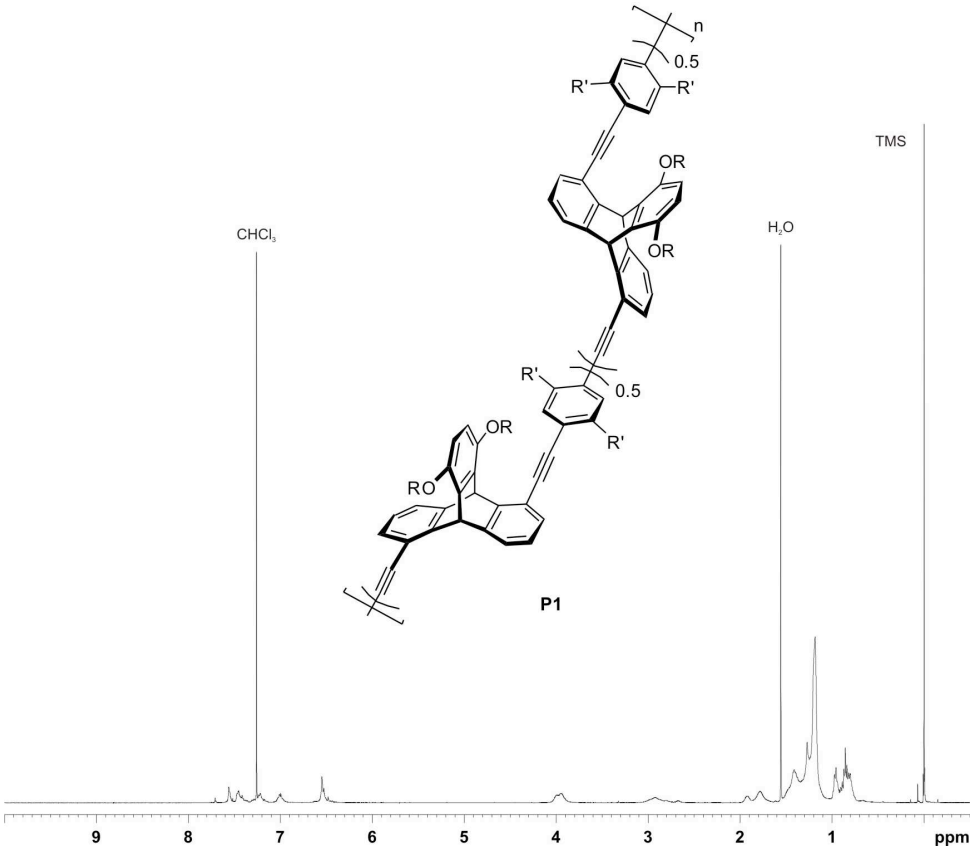

Figure S9. ^{1}H NMR spectrum of polymer **P1** in $CDCl_3$.

Gel permeation chromatography

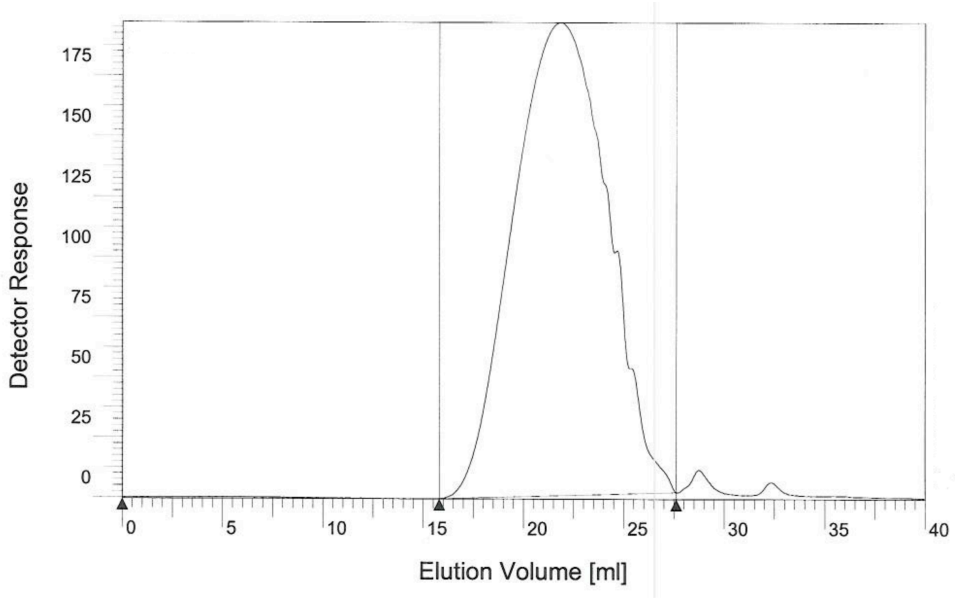

Figure S10. Gel permeation chromatogram of polymer **P1** (eluent: THF; detection wavelength: 254 nm).